

## **Data Files Description for the Dietary Supplement Ingredient Database - Release 2 (DSID-2)**

The second release of the Dietary Supplement Ingredient Database (DSID-2) reports national estimates for ingredient levels in adult and children's multivitamin/mineral (MVM) products. The data files in DSID-2 are provided in several formats.

### **DSID-2 Adult MVM Data Files Summary**

**NOTE: Adult MVM results were originally released in DSID-1 in April 2009. DSID-1 adult MVM results have been replaced with updated data for selected ingredients and statistical updates for additional ingredients and released in DSID-2.**

The DSID-2 adult MVM data files contain national estimates for 18 vitamins and minerals in adult MVMs. For more details about the adult MVM study, see the [Adult MVM Research Summary](#) on the DSID-2 website. The DSID-2 statistical results are reported and data are applied to adult MVM products reported in the National Health and Nutrition Examination Survey (NHANES) 2003-04, 2005-06, and 2007-08. Each table is described later in this report.

### **DSID-2 Children's MVM Data Files Summary**

DSID-2 children's MVM data files contain national estimates for 16 vitamins and minerals in children's MVM products. The Supplement Facts labels on children's MVM products often show more than one age group and more than one serving size on the panel. Data associated with the age group, 4 years and older (n=59 products) were determined to be the primary dataset for applying regression analysis results to products in population studies. More details are available in the [Children's MVM Research Summary](#) on the DSID-2 website.

The DSID-2 statistical results are reported and data are applied to children's MVM products reported in NHANES 2005-06 and 2007-08, which are the NHANES cycles corresponding most closely to the time period of the DSID study. Each table is described later in this report.

**NOTE: Regression equations for ingredients in children's MVMs with serving sizes for ages 1 to <4 years (n=50 products) have been calculated separately and reported in DSID-2 because they may be applicable for some studies. The regression equation data for this age group are provided in [Auxiliary Table A1](#) on the DSID-2 Data Files page of the DSID website.**

### **DSID-2 Data Table Descriptions**

DSID-2 data files, located on the DSID website, include the following data tables:

## Table 1. DSID Statistical Results

This table lists regression equation parameter values that are based on analytical results for 18 ingredients in adult MVM products and 16 ingredients in children's MVM products labeled for age 4 years and older. A product category code indicates whether the data record is for adult MVMs (01) or children's MVMs (02). Predicted mean values and predicted percent differences from label for each ingredient at various labeled levels can be calculated using the information in this table. In addition, regression parameter values for calculating Standard Errors (SEs) are included.

Table 1 also includes data for calculating predicted mean values and SE of the mean and SE of an individual observation. For each equation, the intercept, linear and quadratic parameter values are listed. For use in estimating the SE, the cubic, quartic, quintic, sextic, septic, and octic parameter values are listed where applicable. The [Example Calculations](#) document on the DSID-2 Data Files web page includes the equations for predicted percent difference from label, predicted mean result per serving, SE of the predicted percent difference, and SE of the predicted result per serving. This information is also available on the second tab of the Excel file for Table 1.

**NOTE: The entire value for each parameter should be used when calculating regression results, because rounding these values produces results that may not match the numbers in Tables 2-5 and in the calculator.**

## Table 2. Predicted Ingredient Amounts

This table lists predicted ingredient mean values and SEs based on the regression equation data in Table 1. In Table 2, linking codes are provided that will apply these results to the data in the NHANES dietary supplement files in Tables 3-5.

An example of the Table 2 format is illustrated below. Table 2 provides information on labeled levels (per serving) for specific ingredients in children's MVMs and adult MVMs. A product category code indicates whether the data record is for adult MVMs (01) or children's MVMs (02). Corresponding to each labeled level is the predicted mean value per serving calculated from the Table 1 regression data. The SE of the mean (SEM) and SE of an individual observation have also been calculated for the labeled levels in 3 NHANES cycles. DSID reports results to three significant digits for the predicted mean value and the predicted percent difference from label and to two significant digits for SEM and SE of an individual observation.

In Table 2, some fields in the NHANES 2003-04, 2005-06, and 2007-08 DSID linking code columns are blank because the specific ingredient/labeled level combinations do not apply to those data cycles.

**Table 2 Example:**

DSID Product Category Code	Ingredient	Label Amount per Serving	Unit	Predicted Mean Value per Serving	Predicted Mean Value per Serving SEM	Predicted Mean Value per Serving SE Individual	Predicted % Difference from Label for Predicted Mean	NHANES 2003-04 DSID Linking Code	NHANES 2005-06 DSID Linking Code	NHANES 2007-08 DSID Linking Code
01	IODINE	60	mcg	75.6	3.6	12	26		3140600001020	
01	IODINE	63	mcg	79.4	3.7	13	26	3140630001020		
01	IODINE	75	mcg	94.6	3.8	15	26	3140750001020	3140750001020	3140750001020
01	IODINE	76	mcg	95.8	3.8	16	26		3140760001020	
01	IODINE	90	mcg	114	3.7	18	26	3140900001020		3140900001020
02	IODINE	67.5	mcg	74.2	5.4	18	9.9		3140675002020	
02	IODINE	70	mcg	76.1	5.8	18	8.7		3140700002020	3140700002020
02	IODINE	75	mcg	79.9	6.5	20	6.5		3140750002020	3140750002020
02	IODINE	76	mcg	80.7	6.6	20	6.1		3140760002020	

**Table 3. DSID Applications to NHANES 2003-04**

This table lists the NHANES 2003-04 supplement IDs, ingredient IDs and labeled ingredient levels which can be applied to each linking code from Table 2. Only the adult MVM data is linked to NHANES 2003-04 records. The linking code is used to extract the appropriate predicted mean values per serving and SEs from Table 2.

**Table 3 Example:**

DSID Product Category Code	NHANES 2003-04 DSID Linking Code	Ingredient	NHANES Ingredient ID	Label Amount per Serving	Unit	NHANES Supplement ID
01	3140630001020	IODINE	10000191	63	mcg	1000135800
01	3140750001020	IODINE	10000191	75	mcg	1000515700
01	3140750001020	IODINE	10000191	75	mcg	1000527300
01	3140750001020	IODINE	10000191	75	mcg	1000529900
01	3140900001020	IODINE	10000191	90	mcg	1000378001
01	3141000001020	IODINE	10000191	100	mcg	1000510800
01	3141000001020	IODINE	10000191	100	mcg	1000490300
01	3141000001020	IODINE	10000191	100	mcg	1000525200
01	3141125001020	IODINE	10000191	112.5	mcg	1000556100
01	3141125001020	IODINE	10000191	112.5	mcg	1000172000

**Table 4. DSID Applications to NHANES 2005-06**

This table lists the NHANES 2005-06 supplement IDs, ingredient IDs and labeled ingredient levels which can be applied to each linking code from Table 2. A product category code indicates whether the data record is for adult MVMs (01) or children's MVMs (02). The linking code is used to extract the appropriate predicted mean values per serving and SEs from Table 2.

**Table 4 Example:**

DSID Product Category Code	NHANES 2005-06 DSID Linking Code	Ingredient	NHANES Ingredient ID	Label Amount per Serving	Unit	NHANES Supplement ID
01	3140600001020	IODINE	10000191	60	mcg	1000623300
02	3140675002020	IODINE	10000191	67.5	mcg	1000626600
02	3140700002020	IODINE	10000191	70	mcg	1000561300
02	3140700002020	IODINE	10000191	70	mcg	1000572800
01	3140750001020	IODINE	10000191	75	mcg	1000012201
01	3140750001020	IODINE	10000191	75	mcg	1000012202
01	3140750001020	IODINE	10000191	75	mcg	1000188201
01	3140750001020	IODINE	10000191	75	mcg	1000238802
02	3140750002020	IODINE	10000191	75	mcg	1000146600
02	3140750002020	IODINE	10000191	75	mcg	1000525700

The following diagram illustrates the relationship between Table 2 and Table 4:

DSID Product Category Code	Ingredient	Label Amount per Serving	Unit	Predicted Mean Value per Serving	Predicted Mean Value per Serving SEM	Predicted Mean Value per Serving SE Individual	Predicted % Difference from Label for Predicted Mean	NHANES 2003-04 DSID Linking Code	NHANES 2005-06 DSID Linking Code	NHANES 2007-08 DSID Linking Code
01	IODINE	63	mcg	79.4	3.7	13	26	3140630001020		
01	IODINE	75	mcg	94.6	3.8	15	26	3140750001020	3140750001020	3140750001020
02	IODINE	67.5	mcg	74.2	5.4	18	9.9		3140675002020	
02	IODINE	70	mcg	76.1	5.8	18	8.7		3140700002020	3140700002020
02	IODINE	75	mcg	79.9	6.5	20	6.5		3140750002020	3140750002020
02	IODINE	76	mcg	80.7	6.6	20	6.1		3140760002020	

  

DSID Product Category Code	NHANES 2005-06 DSID Linking Code	Ingredient	NHANES Ingredient ID	Label Amount per Serving	Unit	NHANES Supplement ID
02	3140700002020	IODINE	10000191	70	mcg	1000561300
02	3140700002020	IODINE	10000191	70	mcg	1000572800
02	3140750002020	IODINE	10000191	75	mcg	1000146600
02	3140750002020	IODINE	10000191	75	mcg	1000525700
02	3140750002020	IODINE	10000191	75	mcg	1000526400
01	3140750001020	IODINE	10000191	75	mcg	1000605300
01	3140750001020	IODINE	10000191	75	mcg	1000640500
01	3140750001020	IODINE	10000191	75	mcg	1000658300
02	3140760002020	IODINE	10000191	76	mcg	1000248700
01	3140760001020	IODINE	10000191	76	mcg	1000590100

**Table 5. DSID Applications to NHANES 2007-08**

This table is similar to Table 4. It lists the NHANES 2007-08 supplement IDs, ingredient IDs and labeled ingredient levels which can be applied to each linking code from Table 2. A product category code indicates whether the data record is for adult MVMs (01) or children's MVMs (02). The linking code is used to extract the appropriate predicted mean values per serving and SEs from Table 2.

### Auxiliary Table A1. DSID Statistical Results

This table of regression predictions is applicable to children's MVM products with 1 to <4 years age group/serving size amounts. This table is being reported as an auxiliary file because these data are applicable only for studies with reported supplement use by 1 to <4 year olds. Predicted mean values and percent differences from label for each ingredient at various labeled levels can be calculated using the information in this table. In addition, regression equation parameter values for calculating SEs are included.

This table also includes information for calculating predicted mean values and SE of the mean and SE of an individual observation. For each equation, the intercept, linear and quadratic parameter values are listed. For use in estimating the SE, the cubic, quartic, quintic, sextic, septic, and octic parameter values are listed where applicable. The Example Calculations document on the DSID-2

Data Files web page includes the equations for predicted percent difference from label, predicted mean result per serving, SE of the predicted percent difference, and SE of the predicted result per serving. This information is also available on the second tab of the Excel file for Table A1.

## **Appendix A. DSID Ingredients and Units**

This reference table lists the vitamins and minerals analyzed in the children's MVM or adult MVM studies, along with units and abbreviations from NHANES, USDA Standard Reference and the Food and Agriculture Organization (FAO).

## **Appendix B. DSID Product Categories**

This reference table lists the dietary supplement product categories and codes in the DSID release and pertinent information about each product category.

## **Applications of DSID-2 Data**

These release files are intended primarily for researchers estimating ingredient intake from surveys of reported dietary supplement use. The DSID data are reported by ingredient and ingredient level for each product category. When applying the regression results, the predicted mean values would be used to estimate the actual content of a supplement at a specific labeled level. For example, all adult MVM products with a labeled level of 400 mcg of folic acid would be estimated to contain 13.2% more than this (453 mcg), which is the predicted mean value. The standard errors reported are indicators of the variability seen among the representative supplement products analyzed for this database.

Since many researchers obtain dietary supplement information from NHANES and track supplements and ingredients using NHANES ID numbers, NDL is providing file formats with codes that are compatible with NHANES data so that users can merge DSID-2 data with NHANES data. For example, users may want to map DSID-2 data in Tables 2-5, which show predicted values for calcium in MVMs at specific labeled levels, to relevant NHANES products at the same labeled levels, so that the data can be used for better estimates of the U.S. population's calcium intake from supplements and food.

DSID data are linked to specific NHANES cycles for which the predictions are appropriate, based on the dates for each study. For example, DSID-2 adult MVM data are based on adult MVM products purchased in 2006-07. The adult MVM data estimates are applied to NHANES 2003-04, 2005-06, and 2007-08 dietary supplement data. DSID-2 children's MVM data are based on children's MVM products purchased in 2008. The children's MVM data estimates are currently being applied to NHANES 2005-06 and 2007-08, which are the two most recent datasets at the time of DSID-2 release.

### **Important Points to Remember for DSID-2**

- 1) The adult MVM data in DSID-2 replace the adult MVM data which were previously released in DSID-1.
- 2) The children's MVM data associated with the serving size 4 years and older are the primary dataset for most applications for children's MVMs. These data are to be used for applying regression analysis results to products which are labeled for ages 4 years and older, and for studies of children in this age group.
- 3) The children's MVM data associated with the products labeled for the age group 1 to <4 years are auxiliary files and are intended specifically for serving sizes for ages 1 to <4 years and for studies of children in that age group. These regression results are listed separately in Auxiliary Table A1, on the Data Files web page of the DSID-2 release.